



INSTRUCTIONS FOR THE PREPARATION OF MANUSCRIPTS

Information for Authors

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Revised August, 2001

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CONFLICT OF INTEREST STATEMENT

Authors of research articles should disclose at the time of submission any financial arrangement they may have with a company whose product figures prominently in the submitted manuscript or with a company marketing a competing product. The possibility of conflict of interest does not disqualify anyone from authorship. We may, however, wish to disclose the potential conflict of interest to our readers.

PLEASE:

- Meet your manuscript due date.
- Limit review to assigned length, plus or minus 25%.
- Plan to provide a PC-formatted version of your manuscript on a disk, if at all possible. Indicate word processing program used. Indicate contents on disk.
- Double space all lines, including Literature Cited, tables, and figure legends.
- Title page. Include title of article, name(s) of author(s), affiliation, and e-mail addresses of all author(s); shortened running title; five key words; abstract; also, mailing and e-mail addresses and telephone and FAX numbers of author who is to receive proofs.
- Contents page. List all headings, indented to indicate level, and list the manuscript page number for each.
- Headings—indicate first-, second-, and third- (if needed) level headings.
- Figures and tables—see info on pp. 5–8. Use of essential color and black and white figures is encouraged at no cost to author. Send originals, copies, and electronic files of all figures. If necessary, figures can be sent to our FTP site. (If you want to place material on our FTP site, please call or email your production editor for the new address, username, password, and directory.) See *Graphics Guide* for preparation instructions.
- Literature Cited—authors are responsible for accuracy. **Use format appropriate to the AR volume for which you are writing** (p. 9). See examples and instructions on correct format beginning on p. 8.
- Abbreviations and symbols—define all but the most common abbreviations.
- Equations and formulas—include short formulas that can be typeset in a straight line in the text. Set out (display) long, complicated formulas. Number key displayed equations.
- Graphic chemical and mathematical formulas—submit on paper as figures for photographic reproduction even if submitting in T_EX or L_AT_EX, or Word Equation Editor.
- Do not word process again when reviewing copyedited manuscript.
- Send paper copies of manuscript, disk, and correspondence to: Production Editor, *Annual Review of* _____, 4139 El Camino Way, P. O. Box 10139, Palo Alto, CA 94303-0139.
- Send Federal Express to Street Address: 4139 El Camino Way, Palo Alto CA 94306.
- **Do not FAX** manuscript to Annual Reviews.

EDITORIAL REMARKS

Process

Following its arrival at Annual Reviews, and its acceptance by an editor of the series, the manuscript is copyedited, typemarked, and sent to a technical editor for scientific editing.

A copy of the edited manuscript is then sent to the author for final checking and response to any questions posed by the editors. This occurs usually within two to three months after the date of submission. The author has six days in which to correct and return the copy. Manuscripts should not be **extensively** revised or rewritten at this stage. **Please do not word process again without consulting the production editor.**

Confirmation page proofs are sent to the author approximately one month after the author returns the corrected manuscript. **Only printer's errors can be corrected and references updated at this stage.**

Style Guidelines

For detailed stylistic guidelines, refer to *Webster's Dictionary, Words Into Type* (Prentice-Hall), *A Manual of Style* (University of Chicago Press), and *Council of Biology Editors' Style Manual* (American Institute of Biological Sciences).

Copyright

United States copyright law requires Annual Reviews to obtain from each author an explicit transfer of those rights necessary for orderly publication of its books and reprints. Therefore we ask each author to sign a statement transferring full and exclusive rights to their article to Annual Reviews. For authors who are federal employees, the article cannot be copyrighted and the US Government retains a nonexclusive, royalty-free license in and to the copyright covering the review.

If an author wishes to use all or part of this material in any other form, print or electronic, or seeks republication, permission must be obtained from the Permissions Department of Annual Reviews by e-mail (permissions@annualreviews.org), fax (650-855-9815), or letter.

Key Words

Please provide 5 key words not in the title.

Abstracts

Please provide an abstract of 100–150 words for your review. This will be made available on the Internet as well as in the printed copy.

Manuscript Preparation

PROOFREADING Please proofread carefully for both errors and inconsistencies in the following: spelling (especially of scientific terminology, proper names, and foreign words), mathematical notation, numerical values in tables and text, and accuracy of quotations.

Be sure that all references, tables, and figures are cited in the text.

ESTIMATING THE LENGTH OF THE MANUSCRIPT Every Annual Review volume has an assigned length. Likewise, each chapter has a length assigned by the editors (always indicated in the letter of invitation). Please keep to this length.

You can roughly estimate the printed length of your chapter at 430 words per text page and 30 citations (with titles) or 45 (without titles) per reference page. Use your own judgment in estimating the size of figures and tables. Add all these together for a total. Another rougher estimate is the size of the computer files; in Word, text and lit cited together should be about 110 to 120 K, again plus tables and figures.

PRINTING OUT THE MANUSCRIPT All material (text, literature cited, footnotes, figure legends, and tables) must be printed out double spaced, with 10 or 12 characters per inch. (Please remember that point-size does not equate with characters/inch. We prefer all word-processed manuscripts be printed out in 12-point type, which is about 10 characters per inch.) **Please do not use small (more than 12 characters per inch) type, space-and-a-half line spacing, or low-resolution dot-matrix printing.** These manipulations do not make your review shorter, only harder to read.

Number all pages consecutively and arrange in this order: title page, text, figure legends, literature cited, tables, and figures.

Place the title page on a separate sheet and include:

1. Full title of article.
2. Each author's name, affiliation (department or section, institution, city, state, postal code, and country), and e-mail address.
3. Five key words or phrases (not in the title) for indexing and online searches.
4. A shortened title of 35 characters or fewer, to be used as a running head.
5. The name of the author to whom the proofs should be sent, with correct mailing address, telephone, e-mail, and FAX numbers.

ITALICS Indicate italics in typescript or printout using italic print. If you wish something to be printed with an underline, please indicate this on the paper copy.

Use italics for:	Do not use italics for:
Scientific names of bacteria and protozoa	Emphasis
Genera, species, and subspecific taxa	Common foreign words such as <i>ad hoc</i> , <i>a priori</i> , <i>in vivo</i> , <i>in vitro</i>
In chemical names, <i>p</i> , <i>o</i> , <i>m</i> , <i>n</i> , <i>cis</i> , <i>sec</i> , <i>sic</i> , <i>trans</i> , <i>syn</i>	Abbreviations such as <i>sp.</i> , <i>spp.</i> , <i>var.</i>
Genes, genotypes, loci, markers, mutants, alleles, operons	Names of taxa of ranks higher than genus
Mathematical variables	Generic names used as adjectives
Strictly defined introduced terms	Names of microorganisms used colloquially (e.g. <i>actinomycetes</i>)
	Strain designations
	Names of cells, phages, hosts, phenotypes
	R, X, M, B, A, etc. in formulas and equations where they represent chemical elements or groups

FOOTNOTES We discourage the use of footnotes as these tend to interrupt the flow of the text. Number all text footnotes consecutively in order of appearance throughout chapter. Use a superscript number to key each footnote to the word or statement annotated (e.g. “The term *operator*¹ is used”). Formulas and complex mathematical material cannot be typeset in footnotes.

Designate footnotes to tables by superscript lower-case letters; begin lettering anew for each table. Double space footnotes at the foot of the table.

Include brief citations of unpublished observations and personal communications in parentheses **in the text**, not as footnotes (nor as references in Literature Cited section); use initials with surnames (e.g. RL Smith, unpublished data).

Sending the Manuscript

Annual Reviews volumes are copyedited on computer and we request submission of a disk containing a copy of the manuscript in addition to the paper copy(ies). We can accept disks from either PC-compatible or Macintosh computers (we prefer the PC). Mathematically complex papers should be submitted in L_AT_EX or T_EX, if possible. The list below indicates the submission requests for each volume.

- Please submit **one copy plus a disk** for the following Annual Reviews: *Astronomy and Astrophysics*, *Biochemistry*, *Biophysics and Biomolecular Structure*, *Genetics*, *Genomics and Human Genetics*, *Medicine*, *Microbiology*, *Neuroscience*, *Nuclear and Particle Science*, *Pharmacology and Toxicology*, *Physical Chemistry*, *Phytopathology*, *Plant Biology*, *Political Science*, and *Psychology*.
- Submit **two copies plus a disk** for the following Annual Reviews: *Anthropology*, *Biomedical Engineering*, *Cell and Developmental Biology*, *Earth and Planetary Sciences*, *Ecology and Systematics*, *Entomology*, *Fluid Mechanics*, *Immunology*, *Materials Research*, *Neuroscience*, *Nutrition*, *Physiology*, and *Public Health*.
- Submit **three copies plus a disk** for the *Annual Review of Sociology*.
- Submit **four copies plus a disk** for the *Annual Review of Energy and the Environment*.

Online and Print Publication

The title and abstract of your chapter will be available on the Annual Reviews Web site about three months before print publication. About one month before print publication, the full text will become available online to Annual Reviews subscribers.

ELECTRONIC MATERIALS POLICY

Annual Reviews offers an additional service to its authors. Chapter-relevant material that is costly, difficult, or impossible to include in the printed volume may now be posted on our Web site. Candidates for inclusion in this Web repository are figures that will not reproduce well in print, tables, data sets, and multimedia objects (e.g. sound, video, animations, 3D objects, etc.).

Please Note: It is the author's responsibility to put Supplemental Material in a final, copyedited form **before** submission. In most cases we will be unable to revise these materials, either upon submission or thereafter.

Authors who wish to publish Supplemental Material should:

1. Notify their Production Editor **early** in the production process.
2. Review our ***Supplemental Material Policy***. This document provides detailed author guidelines for the submission of Supplemental Material to Annual Reviews for publication. In it you will find information about:

- Preparation guidelines
- Submission guidelines
- Supportable file types
- Size limitations on Supplemental Material projects
- Maintenance guidelines
- How to call out your Supplemental Material in the printed version of your chapter.

You may request a copy of Annual Reviews Supplemental Material Policy from your Production Editor or view it online at: <http://www.annualreviews.org/supmat/supmatpolicy.asp>.

FIGURES AND TABLES

Annual Reviews encourages the use of illustrative figures and tables. Color figures can be included in your chapter at no charge to the extent of 2 leaves (4 sides). Figures and tables you submit with your chapter will appear both in print and online. With your help and some careful planning, we can use the figures you submit for both purposes. Instructions in this section cover issues of content and lettering and other important considerations for legibility and presentation in your chapter.

Considerations of figure aesthetics (whether to use color figures, for example) and of the digital methods for creating and sending your figures are the subjects of the Annual Reviews Graphics Preparation Guide, being sent to you separately. You can also view its contents online at <http://www.annualreviews.org> under "Information for Authors."

Figures

Figures should be well-designed drawings or well-chosen photographs that illustrate key points in your chapter or that present relevant data in an economical way. All materials should be submitted in final form.

To maximize usability of your figures, we hope to have all figures submitted in digital form, in either EPS or TIFF format. (See the Graphics Preparation Guide for instructions.) Also it is essential that you submit

hard copy figures of your digital files when submitting your manuscript. Annual Reviews will keep these unless you ask to have them returned.

FIGURE SIZING The space allocated on an Annual Reviews page for figures is 4.75" wide x 7.25" deep (12 cm x 19 cm). Scale the figures you send us to fit those dimensions. (Note that photographs usually do not benefit from reduction in size.) Avoid, if possible, illustrations oriented broadside (or landscape) on the page.

LETTERING AND SYMBOLS Lettering in figures must be of professional quality and large enough to be legible. We suggest routinely specifying type at 11 pt., and we recommend consistent use of the same typeface (font) throughout your figures in a chapter. (Helvetica and Times are fonts often used in Annual Reviews figures.) If you plan on submitting scaled images that contain type, be certain that type is still legible and consistent in size for all the figures in your chapter, preferably no smaller than 8 pt., in final form. **Avoid using wildly discrepant or very large type sizes in the same figure or set of figures.**

For plot points in graphs, use symbols that are readily available (Zapf dingbats or another computer generated symbol font), and choose symbols that can be seen as separate entities along a line. In final form, the plot symbols should be large enough to be legible (8 pt., for example). Break curves at symbols, and either label curves or use a different pattern for each curve (i.e. solid, broken, or dotted lines). (We suggest introducing color for distinguishing lines in only the most complicated plotting.)

CHEMICAL STRUCTURES Complex equations and chemical structures are considered art and if possible should be submitted in math-friendly software applications such as T_EX or L_AT_EX or ChemDraw, and saved as EPS files. In the event that you don't have one of these applications, submit equations and chemical structures as camera-ready art.

NUMBERING AND NAMING FIGURES Number your figures consecutively as they appear in your chapter, and as they are referenced in the text. When preparing your text files, spell out the word "Figure" in legends and text. Refer to parts of figures as (*left*), (*right*), (*top*), (*middle*), and (*bottom*). Composite figures (those with multiple panels) should be labeled with lower-case letters, referring, for example, to parts (*a*), (*b*), and (*c*).

FIGURE LEGENDS Every figure must have a legend of only a few sentences. Submit figure legends as a separate text file, double spaced. Please do not attach legends to hard copy figures or write them on the figures themselves.

COLOR FIGURES Authors may include up to 2 leaves (4 sides) of color at no cost; more color may be included if the author is willing to pay for the addition. Color figures appear as an insert at the end of the chapter; black and white figures are integrated with the text.

1. Use of color should convey information in the figure in ways not possible in black and white or the meaning should be far more readily understandable because of the color. When color has little significance beyond making the figure more attractive, the image should be redone in black and white. Many charts and simple diagrams use color in this way.
2. When a figure is "color coded" but employs only a few colors, these can often be replaced with shades of gray. (Offset press halftones easily distinguish four grays useful in shade-coding a figure's parts.)
3. Color micrographs or photographs of complex structures will nearly always convey more information than their black and white counterparts. However, photos of people, included for historical rather than medical purposes, rarely require color.
4. See the Graphics Preparation Guide for more details on submitting color figures.

PERMISSIONS You are responsible for obtaining permission to use any copyrighted material. The source of the material should be credited at the end of the figure legend, or placed in a footnote to the figure or table.

The copyright holder may specify the exact language that is to be used.

Tables

Keep tables to a minimum as they are difficult and expensive to typeset. Only material requiring several columns and several entries should be submitted in tabular form (incorporate other material into the text). See example below. Plan tables so that they will fit within an Annual Reviews page width (4 5/16"; 11 cm). Long, complicated tables or those incorporating material that cannot be typeset (e.g. chemical structures, special symbols) should be submitted as camera-ready copy, or in an electronic file to be available online.

Type each table double on a separate page and assemble all tables after the figures. Number tables consecutively. Mention each table by number in the text and note in the manuscript approximately where the table should appear. (Otherwise the table will be placed close to where it is first mentioned in the text.)

A one-line title for each table should enable the reader to understand the data without referring to the text. Include additional information in a footnote keyed to the title and designated as table footnote a.

TABLE 1 Comparison of enzyme activity and stability of microbial cells immobilized with polyacrylamide and carrageenan

Microorganism	Enzyme	Enzyme activity (unit/g cells)		Temperature (°C)	Operational stability Half-life (day)		
		Polyacryl- amide	Carra- geenan		None	Polyacryl- amide	Carra- geenan
<u>Escherichia coli</u>	Aspartase	18,900 (73) ^a	49,400 ^b (49)	37	10	120	680
<u>Streptomyces</u> <u>phaeochromogenes</u>	Glucose isomerase	4,160 (57)	4,310 ^b (59)	60	—	150	289 ^b
<u>Brevibacterium</u> <u>ammoniogenes</u>	Fumerase	5,800 (60)	5,800 (60)	37	6	53	75
<u>Brevibacterium flavum</u>	Fumerase	6,680 (34)	9,920 (51)	37	—	94	160

^aValues in parentheses are percentages that show yield of activity after immobilization or after treatment with glutaraldehyde and hexamethylenediamine.

^bTreatment with glutaraldehyde and hexamethylenediamine

BOXHEADS Provide a brief heading (boxhead) for each column; type headings in lowercase letters, capitalizing the first word only. Units of measurement should be indicated in parentheses after the appropriate boxhead rather than in the body of the table, e.g. Temperature (°C). Abbreviate longer boxheads to conserve space and explain the abbreviations in a footnote. If subheadings are used, draw a horizontal line under the main boxhead to extend above all relevant subheadings.

RULES Do not use vertical rules. Draw a double line between table title and boxheads, a single line between boxheads and the body of the table, and a single line at the end of the table before the footnotes.

BODY OF TABLE Align entries under the appropriate boxhead or subheading. If necessary draw vertical lines lightly in colored pencil in the body of the table (they will not be typeset) to clarify where entries for each column begin and end. If subheadings are used in the stub (the lefthand column), type main stub headings flush to the left margin and underline them; indent subheadings.

Type longer entries in block style, leaving extra space between entries. Align numerals on the decimal; if numerical data are mixed, center entries in the column. Write out repeated entries; do not use ditto marks or leave a blank space. Use an em dash (—) if no information is available. If a data column heading is not applicable to a particular item, leave the space blank; do not use a dash.

FOOTNOTES Print out double-spaced notes at the foot of the table; label each with a superscript letter (a, b,

c, etc.) keyed to the title, boxhead, or entry on the table. Begin the lettering anew for each table. If a footnote applies to more than one table, key it to the title of subsequent tables.

LITERATURE CITED

Citation In Text

- Reference numbers in text should appear in parentheses with a space between each item, e.g. (1, 4, 7).

- Use ampersand to indicate authorship for two authors. For three or more authors, use “et al.,” “and coworkers,” or “and associates” in text. Use no comma before ampersand.

White & Gray (52) experimented....

Smith et al. (18) tested the theory.

- Often, you can omit author names in text to save space.

Tests for helicity showed. . . (24, 33–35, 87, 88).

NOTE: In multiple citations, references should appear in numerical sequence.

- Use semicolons to separate unlike elements within the parentheses.

...(35; J. S. Smith, unpublished information).

...(14, 36, 85; see also 7, 10, 21).

Each reference in the literature cited section must be mentioned in text or tables.

Do not use author’s initials in text unless necessary to distinguish two authors of the same surname. Do include initials in citing personal communications or unpublished information (including your own) in the text. *Italicize titles of books and journals.*

References to unpublished observations, personal communications, papers in preparation, etc., should be enclosed in parentheses in text (R. S. Jones, unpublished observations) or may appear as footnotes if long. **Do not list them as references in the literature cited section.** Include all authors in these citations—do not use et al.

Citation In Bibliography

- Begin the Literature Cited on a separate page following the text, before tables and figures; do not list them as footnotes to the text. Type the heading, “Literature Cited,” in capitals. **Double space between each line, not just between each entry**, throughout the bibliography. Do not indent the first line of each entry.

- **For each author, use last name first, then initials, no periods.**

Responsibility for the accuracy of the bibliographic references rests entirely with the author. Therefore, please confirm accuracy of all references by comparing the final typed version of the manuscript citations with the original publications.

Among Annual Reviews with numbered citations, four bibliographic styles are in use: 1. alphabetized, with article titles included; 2. in order of appearance with titles included; 3. in order of appearance with titles excluded; and 4. author/date. (There is a separate pink Author Instruction book for the latter style.) Follow the bibliographic policy for the Annual Review to which you are contributing, as indicated below:

1. List references in **alphabetical order**, number consecutively, **include titles** of articles or chapters for the *Annual Review of*:

Biophysics and Biomolecular Structure
Entomology
Genetics
Genomics and Human Genetics
Microbiology

Nutrition
Phytopathology
Plant Physiology and Plant Molecular Biology
Public Health

2. List in **order of appearance**, number consecutively, **include titles** of articles or chapters for the *Annual Review of*:

Biomedical Engineering
Energy and the Environment
*Immunology (Also include all authors;
do not use et al.).*

Medicine
Pharmacology and Toxicology
Physiology

3. List references in **order of appearance**, number consecutively, **do not include titles** of articles or chapters for the *Annual Review of*:

Biochemistry
Materials Research

Nuclear and Particle Science
Physical Chemistry

4. Some Annual Reviews use Harvard Style: *Anthropology, Astronomy and Astrophysics, Cell and Developmental Biology, Earth and Planetary Sciences, Ecology and Systematics, Fluid Mechanics, Neuroscience, Political Science, Psychology, and Sociology*. A separate (pink) instruction book should be used for these.

For alphabetized literature cited format (styles 1 and 2, above), alphabetize by last name of author, then by initials, by last names of coauthors, and finally by year. Alphabetize compound surnames by the first word, e.g. list under “de,” “van,” “von,” etc. Number the alphabetized list consecutively.

181. Zeiger E. 1990.
182. Zeiger E, Armond P, Melis A. 1981.
183. Zeiger E, Bloom AJ, Hepler PK. 1990.
184. Zeiger E, Field C, de Vitry C. 1988.
185. Zeiger E, Field C, Mooney HA. 1981.
186. Zeiger E, Hepler PK. 1991.
187. Zeiger E, Hepler PK. 1993.

Indicate italics for the book or journal title (see next page and p. 11 for examples). Do not abbreviate book titles. Abbreviate titles of journals, proceedings, symposia, and serial compendia (such as the Annual Review volumes) according to the *Bibliographic Guide for Editors and Authors* (out of print but originally published by the Chemical Abstracts Service of the American Chemical Society) or *Documentation—International List of Periodical Title Word Abbreviations* (ISO 833), published by the International Organization for Standardization. **Do not abbreviate one-word titles.**

List numbered references in the Literature Cited with numerals and period, without parentheses. Include the following information (**in this order**):

1. Name(s) of author(s), last name first, followed by initials without periods. Include both (or all) initials for each author whenever they were included in the original article or book. **Do not leave space between initials.** (Use of single initials in authors' names in the bibliography creates difficulties in compiling an accu-

rate index.) Do not use a comma between surnames and initials—use commas only to separate different authors' names. If a given reference has seven or more authors, list the first five, then type "et al." in the bibliography. (But in text, use et al. for three or more authors.) If a reference has six or fewer authors, list them all. [Exceptions: For the *Annual Review of Immunology*, include all authors in each reference; do not use "et al." in the Literature Cited. For the *Annual Review of Nuclear and Particle Science*, list all authors up to four; for more than four list first author, then et al. For the *Annual Review of Medicine* list first three authors, then et al.]

Literature Cited

1. Anderson SO. 1985. Sclerotization and tanning of the cuticle. In *Comprehensive Insect Physiology, Biochemistry, and Pharmacology*, ed. GA Kerkut, LI Gilbert, 3:59–74. Oxford: Pergamon
39. Foote SJ, Kyle DE, Martin RK, Oduola AMJ, Forsyth K, et al. 1990. Several alleles of the multidrug-resistance gene are closely linked to chloroquine resistance in *Plasmodium falciparum*. *Nature* 345:255–58
- Annotations:
- List author's surname first
 - Italicize book titles. Do not use quotations.
 - List editor's initials first
 - Use "et al." if more than five authors (except AR Immunology).
 - Omit second hundreds digit
 - Do not abbreviate one-word titles.

2. Year of publication of the article or book, e.g. 1991. (**no parentheses**). [Exception: For the *Annual Review of Nuclear and Particle Science*, place the year **in parentheses** at the **end** of the reference.] If the article has been accepted for publication and is actually in press, list it in the Literature Cited section. Give year and journal title, plus volume and pages when known.

3. Title of article or chapter (see above for policy of individual Annual Reviews regarding whether or not to include titles of articles or chapters).

4. Title of journal (abbreviated unless only one word) or book (not abbreviated unless part of a periodical series), e.g. *J. Immunol.*

5. For book reference, name(s) of editor(s).

6. Volume, issue, or number (if any), and inclusive page numbers separated by a colon; if there is no volume number, inclusive page numbers preceded by a comma and "pp." [Exception: For the *Annual Reviews of Nuclear and Particle Science*, and *Biophysics and Biomolecular Structure*, you need only list the first page of a chapter or article.] For example: 10 (4) :123. Do not repeat hundreds digit, e.g. 3–10, 71–77, 100–9, 331–35, 1002–3, 1198–202, 1536–38.

7. For book reference, place of publication, name of publisher, total number of pages (optional), and edition, if necessary. For example: New York: Sage (**do not put a period at end of reference**).

NOTE: To add reference(s) without renumbering (e.g. between references 12 and 13), use a lowercase letter (e.g. 12a, 12b, etc.) in both text and bibliography. To delete reference, substitute "Deleted in proof" after the number.

References appear as follows (note patterns of abbreviation, capitalization, spacing, and punctuation).

JOURNAL REFERENCE WITH TITLE OF ARTICLE

24. Roberts DF. 1956. A demographic study of a Dinka village. *Hum. Biol.* 28:323-49

JOURNAL REFERENCE WITHOUT TITLE OF ARTICLE

9. Berson SA, Balow RS. 1991. *Am. J. Med.* 50:623-29

BOOK REFERENCE WITH TITLE OF CHAPTER

76. Bornstein L. 1968. Recombination in bacteria. In *Human Genetics*, ed. R Johnston, E Smith, 1:65-73. London/New York: Macmillan. 450 pp.
77. New MI, Schram P. 1998. Congenital adrenal hyperplasia. In *Current Diagnosis*, ed. RB Conn, WZ Borer, JW Snyder, 9:50-75. Philadelphia: Saunders
[volume as part of title]
78. Lerner RM, ed. 1998. *Handbook of Child Psychology*. Vol. 1: *Theoretical Models of Human Development*, pp. 25-50. New York: Wiley

BOOK REFERENCES WITHOUT TITLE OF CHAPTER

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NOMENCLATURE

General Nomenclature

BACTERIOLOGICAL NAMES Use *Bergey's Manual of Determinative Bacteriology* and *Index Bergeyana* as guides for names of bacteria.

BIOCHEMICAL NOMENCLATURE We accept all abbreviations, symbols, and trivial names in the rules of the IUPAC-IUB on biochemical nomenclature.

CHEMICAL NAMES Use *Chemical Abstracts* and *Index Medicus* subject indexes and *Merck Index* as guides in spelling names of chemical compounds.

DRUGS Use nonproprietary (generic) names for drugs. When the name is relatively unfamiliar, follow its first use with the trade name. The *Annual Reviews of Entomology, Medicine, Nutrition, and Pharmacology and Toxicology* require the use of ® as a superscript on first use of a trade name.

[Exception: In the *Annual Review of Psychology*, the terms adrenaline and noradrenaline (not capitalized) are permissible in place of epinephrine and norepinephrine.]

GENETICS Compilations of gene symbols, with additional data including linkages, can be found in *Handbook of Biochemistry* (1970, ed. HA Sober. Cleveland: Chem. Rubber Co. 2nd ed.). Refer to reprint by M. Demerec et al. [July 1966. *Genetics* 54 (1): Pt. 1, 61-75] or proposal for uniform nomenclature in bacterial genetics. See also section on italics in this booklet.

GENUS-SPECIES SCIENTIFIC NAMES Spell out the full generic and specific names on first use: e.g. *Escherichia coli*. Thereafter, the genus name may be abbreviated to the first letter (*E. coli*). If the name appears frequently and may be confused with another genus whose first letter is the same, spell both names out every four or five pages of manuscript.

INSECTICIDES Use common names approved by the Entomological Society of America (list available from the Society).

INSECTS Use common and scientific names approved by the Entomological Society of America (list available from the Society) whenever possible. Authors from non-North American countries may use common names current in their countries. In general, do not capitalize the first letter of a common name unless a proper name is included.

PHYSIOLOGY Use the conventions for respiratory physiology from the *Handbook of Physiology*.

Abbreviations and Symbols

Use abbreviations and symbols sparingly and only if terms are repeated frequently. Define all but the obvious standard symbols and abbreviations (see list below) when they first appear in text. Avoid using nonstandard abbreviations in titles and headings.

Chemical and graphic formulas may be used (see next section) and are set in roman type. Use U^{3+} rather than U^{+++} . Atomic weights of isotopes are to be indicated by superscripts preceding the element symbol: ^{14}C , [^{14}C]urea.

Use abbreviations of units of measure only when preceded by a numeral: 38 mm (but, a few millimeters). Use the same abbreviations for singular and plural, without periods or apostrophes except in special cases

noted below. Verbs must agree in number with the quantity: 1 mm is, 3 mm are. . . . Use a space between the numeral and the unit of measure, except with degree, percent, and Svedberg (5°C, 10%, 6S).

Spell out genus names upon first usage: the name may be abbreviated to its first letter afterwards when used in combination with the species name. Never abbreviate generic names when used alone; also, **do not abbreviate the species name** when a subspecies is designated. For example, use *B. thuringiensis israelensis*, not *B. t. israelensis*. (See also section on nomenclature.)

Standard Abbreviations and Units (may be used without explanation)

acceleration of gravity	<i>g</i>	deuteron	<i>d</i>
alternating current	ac	dextro	D
ampere	A	diffusion coefficient	D
angstrom	Å	direct current	dc
ante meridiem	AM	dyne	dyn
approximately	~		
approx. equal	≈	electrocardiogram	ECG
aqueous	aq	electroencephalogram	EEG
astronomical unit	AU	electromagnetic units	emu
atmosphere	atm	electromotive force	emf
atomic mass unit	amu	electron	e
atomic unit	au	electron spin resonance	ESR
atomic weight	at wt	electron volt	eV
atto-	a-	electrostatic units	esu
average	av	enthalpy change	ΔH
		entropy change	ΔS
bar	spell out	entropy unit	eu
barn	b	equilibrium constant	<i>K</i>
billion electron volt	BeV, GeV	equivalent	eq
British thermal unit	Btu	erg	spell out
		et alii (and others)	et al.
calorie	cal	et cetera	etc.
candela	cd	exponential	exp.
centi-	c-		
centimeter	cm	femto-	f-
centimeter-gram-second	cgs	fermi, farad	F
central nervous system	CNS	figure	spell out
compare	cf.	foot	ft
concentration	conc	foot candle	fc
constant	const		
cosecant	csc	gauss	G
cosine	cos	Gibbs energy change	ΔG (not ΔF)
cotangent	cot	giga-	G-
coulomb	C	gram	g
counts per minute	cpm	gram calories	gcal
cubic centimeter	cm ³	gravitational constant	<u>G</u>
curie	Ci	gravity, centrifugal	<i>g</i>
curl	spell out	Gray	Gy
cycles per second	Hz		
		Hertz	Hz
Daltons	Da	hour	h
day	spell out	hydrogen ion (conc)	pH
deci-	d-		
decibel	dB	id est (that is)	i.e.
degree	°	inch	spell out
degrees centigrade or Celsius	°C	infective dose	ID ₅₀
degrees Fahrenheit	°F	infrared	IR
degrees Kelvin	K	international unit	IU

joule	J	nanometer	nm
Kelvins	K	neutron	n
kilo-	k-	normal (conc)	N
kilobase, kilobasepair	kb	nuclear magnetic resonance	NMR
kilocalorie	kcal		
kilocycle	kc	oersted	Oe
kilodalton	kDa	ohm	Ω
kilo electron volt	keV	page, pages	p., pp.
kilogauss	kG	parsec	pc
kilogram	kg	parts per million	ppm
kilohm	k Ω	pascal	Pa
kilometer	km	percent	%
kiloparsec	kpc	pico-	p-
kilovolt	kV	post meridiem	PM
kilowatt-hour	kWh	potential difference	PD
		probable error	pe
		proton	p
lethal dose	LD ₅₀		
levo	L	radiation, ionizing, absorbed dose	rad
liter	spell out	radiofrequency	rf
logarithm	log	retardation factor	R_f
logarithm, natural	ln	revolutions per minute	rpm
		roentgen	r
magnitude	mag	root mean square	rms
maximum	max		
mega-	M-	second	s
megacycles per second	MHz	seconds of arc	arcsec
megawatt	MW	section	Sect.
meter	m	sedimentation coefficient	s
Michaelis constant	K_m	solar mass	<u>M.</u>
micro	μ -	species	sp., spp.
microampere	μ A	Specific rotation	α
microgram	μ g (not λ)	square centimeter	cm ²
micrometer (not micron)	μ m	Svedberg (10^{-13} s)	S
micromolar (conc)	μ M	standard deviation	SD
micromole	μ mol	standard error	SE
milli-	m-		
milliampere	mA	tangent	tan
millibar	mbar	tera-	T-
millielectron volt	meV	torr	torr (not Torr)
milliequivalent	meq		
milligram	mg	ultrahigh frequency	uhf
milliliter	ml	ultraviolet	UV
millimeter	mm	universal gravitation constant	G
millimeters of mercury	mm Hg	universal time	UT
millimolar (conc)	mM		
millimole	mmol	variant	var.
million electron volt	MeV	versus	vs
million years ago, mega annum	Ma	volt	V
millisecond	ms		
millivolt	mV	watt	W
minute	min	weight concentration	g/ml (not mg%)
minutes of arc	arcmin	weight percent	wt%
molar (conc)	M (not μ mol/ml)	week	spell out
mole	mol (not M)		
molecular weight	M_r or mol wt	year	spell out
month	spell out		
nano-	n-		

Layout

Keep equations and formulas to a minimum. Equations and formulas should be in complete sentence form and include punctuation after displayed formulas.

Include short formulas that can be set on one line in the line of text by using the slash (/) rather than the horizontal bar to indicate division. Set out (display) long formulas on a separate line (see examples below).

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Use boldface roman rather than arrows for vectors. Unless otherwise indicated, all characters in mathematical notation will be set in italic type, with the exception of numerals, symbols for chemical elements, Greek letters, and common abbreviations such as *ln*, *exp*, *cos*, etc. Define uncommon symbols on first use for the nonspecialist.

Distinguish superscripts to superscripts and subscripts to subscripts from double superscripts and double subscripts (e.g. e^{a^2} vs e^{a^2} , vs n_{H_3} vs n_{H_3}). Align subscripts with superscripts.

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